

SAFETY DATA SHEET

FOR COATINGS, RESINS, AND RELATED MATERIALS

SECTION I – Chemical Product and Company Identification

Product name: L-3685
Supplier: C. L. Hawthaway & Sons Corp.
638 Summer Street
Lynn, Massachusetts 01905
USA
Product class: Waterborne Polyurethane
Material uses: Resin used in the production coatings and adhesives
Information
Telephone number: (781) 592-6444
Emergency
Telephone number: (800) 424-9300 Chemtrec
(703) 527-3887 Outside the United States

SECTION II – Hazards identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

GHS Classification of the product:

Acute toxicity (oral)	4	
Skin Corr. /Irritation	2 Skin	corrosion/irritation
Skin Sensitization	1	
Eye Dam. /Irritation	2A	Serious eye damage/eye irritation
Repr.	1B (unborn child)	Reproductive toxicity
STOT SE	3 (irritating to respiratory system)	
	Specific target organ toxicity — single exposure	
Chronic aquatic toxicity	2	

Label elements

Pictogram:



Signal Word:
Danger

GHS Hazard: Reproductive toxicity (adverse effects on development of the offspring), specific target organ toxicity (single and repeated exposure), respiratory sensitization, skin sensitization, skin irritation, eye irritation.

Hazard Statement:

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction

H318 Causes serious eye irritation.

H335 May cause respiratory irritation.

H360 May damage the unborn child.

H411 Harmful to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P260 Do not breathe dust/gas/mist/vapours.

P264 Wash with plenty of water and soap thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statements (Response):

P301 + P330 + P331 IF SWALLOWED: rinse mouth. DO NOT induce vomiting.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P303 + P362 IF ON SKIN (on hair): Wash with plenty of soap and water.

P308 + P311 IF exposed or concerned: Call a POISON CENTER or doctor/physician.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P337 + P311 If eye irritation persists: Call a POISON CENTER or doctor/physician.

P362 + P364 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.

P391 Collect spillage.

Precautionary Statements (Storage):

P233 Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

Precautionary Statements (Disposal):

P501 Dispose of contents/container to hazardous or special waste collection

point.

OSHA/HCS status: This material is considered hazardous by OSHA Hazard Communication Standard 29 CFR 1910.120

Note: This material is for commercial/industrial use only. Not for consumer use.

SECTION III – Composition/Information on Ingredients

Hazardous Components

<u>Components</u>	<u>CAS number</u>	<u>EC list number</u>	<u>% by Weight</u>
Pentaerythritol tetraacrylate	4986-89-4	225-644-1	3.5 – 5.0%
N-methyl-2-pyrrolidone	872-50-4	212-828-1	3.7
Triethylamine	121-44-8	204-469-4	1.2

SECTION IV – FIRST AID MEASURES

Eye Contact:

In case of contact, flush eyes with plenty of lukewarm water. Use fingers to ensure that the eyelids are separated and that the eye is being irrigated. Get medical attention if irritation develops.

Skin Contact:

In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Call physician if irritation develops or persists. Thoroughly clean shoes before reuse. Wash contaminated clothing before reuse.

Inhalation:

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion:

If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

SECTION V – FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Use water, foam or dry chemicals.

Special Fire Fighting Procedures:

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

Unusual Fire/Explosion Hazards:

Vapors are heavier than air and may travel a considerable distance to a source of ignition and flashback. Vapors or fumes may form explosive mixture with air.

Hazardous Thermal Decomposition Products:

In case of fire, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, (dense) black smoke, aldehydes, organic acids, nitrogen oxides, ammonia, amines.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Spill and Leak Procedures:

Contain spill. If spilled in an enclosed area ventilate. Wear proper personal protective clothing and equipment. Do not flush liquid in public sewer, water systems or surface waters. Recover as much as possible and absorb remainder with inert material. Place into labeled containers and store in safe locations for proper disposal. Wash spilled areas with soap and water.

SECTION VII – HANDLING AND STORAGE

Storage Temperature:

Minimum: 5°C (41°F)
Maximum 40°C (104°F)

Handling:

Avoid eye contact, repeated or prolonged skin contact or inhalation of aerosol, mist or vapors. Wash thoroughly after handling. Use in well ventilated areas.

Storage:

Keep containers closed when not in use. Do not store in open, unlabeled or mislabeled containers. Product is not reactive or degraded by moisture, however protect from moisture contamination for performance purposes.

SECTION VIII – EXPOSURE CONTROLS/ PERSONAL PROTECTION
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Occupational Exposure Limits

ACGIH-TWA ACGIH-STEL OSHA-TWA OSHA-STEL

Pentaerythritol tetraacrylate	N/E	N/E	N/E	N/E
N-methyl-2-pyrrolidone	N/E	N/E	N/E	N/E
Triethylamine	1 ppm	N/E	25 ppm	N/E

Engineering Controls:

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal Protection

Eyes:

Chemical safety goggles or safety glasses with side-shields. Chemical safety goggles/safety glasses

Skin:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory:

Use a properly fitted, air-purifying or air fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and safe working limits of the known respirator. Recommend using NIOSH certified respirator with APF 1000 for spray applications and APF 50 for no spray applications.

Hand:

Impervious gloves, Butyl rubber gloves, Nitrile rubber gloves, Neoprene gloves.

Additional Protective Measures:

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available. Store separate from food products.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES
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Form:	Liquid
Appearance:	Translucent/Milky
Odor:	Amine
Solubility in Water:	Dispersible
PH:	7.0 – 10.0

Boiling Range: >200°F.
Evaporation Rate: Slower than ether
Vapor Density: Heavier than air
% Volatile by Weight: 65.0 %
Specific Gravity: 1.06
Lb. VOC/Gal. Coating: 0.44

SECTION X – STABILITY AND REACTIVITY

Stability:

This product is stable under normal storage and use conditions.

Hazardous Polymerization:

Will not occur.

Incompatibility:

Strong oxidizing agents, excessive heat.

Hazardous Decomposition Products:

Decomposition of the dry solids may generate irritating vapors, CO₂, CO.

SECTION XI – TOXICOLOGICAL INFORMATION

Toxicity Data for L-3685

Toxicity Note:

No data available for this product.

Toxicity Data for pentaerythritol tetraacrylate

Component:

4986-89-4:

Potential health effects:

May cause sensitization by skin contact. Irritating to skin. Damage to eyes.

Acute toxicity:

Oral: Harmful if swallowed.

Dermal: No data available.

Skin Corrosion/Irritation: Irritation.

Serious Eye Damage/Irritation: Irritation.

Respiratory Sensitization: No data available.

Skin Sensitization: Sensitization.

Carcinogenicity: No data available.

Germ cell mutagenicity: No data available.

Reproductive toxicity: No data available.

Specific target organ toxicity: No data available.

Aspiration hazard: No data available.

Toxicity Data for N-methyl-2-pyrrolidone:

Component:

872-50-4:

Acute Toxicity:

Type of value: LD50

Species: rat (male/female)

Value: 4,150 mg/kg (OECD Guideline 401)

Literature data

Acute Inhalation Toxicity:

Type of value: LC50

Species: rat (male/female)

Value: >5.1 mg/l (OECD Guideline 403)

Acute Dermal Toxicity:

Type of value: LD50

Species: rat (male/female)

Value: >5,000 mg/kg (OECD Guideline 402)

Literature data.

Assessment other acute effects:

Component:

872-50-4:

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation/corrosion:

Component:

872-50-4:

Assessment of irritating effects:

Eye contact causes irritation. Skin contact causes irritation. Causes temporary irritation of the respiratory tract. EU-classification.

Skin:

Species: rabbit

Result: Slightly irritating.

Method: Draize test

Literature data: The European Union (EU) has classified this substance with “Irritating to skin” (R38).

Eye:

Species: rabbit

Result: Irritant.

Method: Draize test

Literature data.

Sensitization:**Component:****872-50-4:****Assessment of sensitization:**

Skin sensitizing effects were not observed in animal studies.

Mouse Local Lymph Node Assay (LLNA)

Species: mouse

Result: Non-sensitizing.

Method: OECD Guideline 429

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aspiration hazard:**Component:****872-50-4:**

Not applicable.

Chronic Toxicity/Effects:**Component:****872-50-4:****Repeated Dose Toxicity:**

Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation. The substance may cause damage to the testes after repeated inhalation of high doses.

Experimental/calculated data: Rat by inhalation 2 Week 10 dose

Genetic toxicity:**Component:****872-50-4:**

Assessment of mutagenicity: The substance was not mutagenic in bacteria. No mutagenic effect was found in various tests with mammalian cell culture and mammals.

Carcinogenicity:

Component:

872-50-4:

Assessment of carcinogenicity: In long-term animal studies in which the substance was given by inhalation, a carcinogenic effect was not observed. In long-term studies in rats in which the substance was given by feed, a carcinogenic effect was not observed. In long-term studies in rodents exposed to high doses, a tumorigenic effect was found; however, these results are thought to be due to a rodent-specific liver effect that is not relevant to humans. The whole of the information assessable provides no indication of a carcinogenic effect.

Reproductive toxicity:

Component:

872-50-4:

Assessment of reproduction toxicity: As shown in animal studies, the product may cause damage to the testes after repeated high exposures that cause other toxic effects.

Teratogenicity:

Component:

872-50-4:

Assessment of teratogenicity: The substance caused malformations/developmental toxicity in laboratory animals.

Other Relevant Toxicity Information:

May cause irritation of respiratory tract.

Toxicity Data for triethylamine:

Component:

121-44-8:

Acute Toxicity:

Acute Oral Toxicity:

Type of value: LD50

Species: rat (male/female)

Value: 730 mg/kg (similar to OECD Guideline 401)

Acute Inhalation:

Type of value: LC50

Species: rat (male/female)

Value 7.22 mg/kg (OECD Guideline 403)

Exposure time 4 h

The vapor was tested.

Acute Dermal Toxicity:

Type of value: LD50

Species: rabbit (male)

Value 580 mg/kg (similar to OECD Guideline 402)

Literature data.

LD50: 580 mg/kg (rabbit)

Assessment other acute effects:

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation/corrosion:**Component:****121-44-8:**

Assessment of irritating effects: Highly corrosive! Damages skin and eyes.

Skin:

Species: rabbit

Result: Corrosive

Method: BASF-Test

Eye:

Study scientifically not justified. As the product irritates the skin, it can be expected to have similar effect on the eyes.

Sensitization:**Component:****121-44-8:**

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Mouse ear swelling test (MEST)

Species: mouse

Result: Non-sensitizing.

Chronic Toxicity/Effects:**Component:****121-44-8:****Repeated dose toxicity:**

Assessment of repeated dose toxicity: Repeated Inhalative uptake of the substance did not cause substance-related effects.

Genetic toxicity:**Component:**

121-44-8:

Assessment of mutagenicity: No mutagenic effect was found in various tests with bacteria and mammalian cell culture. The substance was not mutagenic in studies with mammals. Literature data.

Carcinogenicity:

Component:

121-44-8:

Assessment of carcinogenicity: No data available concerning carcinogenic effects. Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies.

Reproductive toxicity:

Component:

121-44-8:

Assessment of reproductive toxicity: The results of animal studies gave no indication of a fertility impairing effect. The results were determined in a Screening test (OECD 421/422). The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Teratogenicity:

Component:

121-44-8:

Assessment of teratogenicity: No indications of a development toxic/teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Symptoms of Exposure:

Overexposure may cause: difficulty breathing, coughing.

SECTION XII – ECOLOGICAL INFORMATION

Ecological Data for L-3685

Additional Ecotoxicological Remarks:

No data available for this product.

Ecological Data for pentaerythritol tetraacrylate

Component:

4986-89-4:

Ecotoxicity:

Toxic to aquatic life with long lasting effects.

Persistence and degradability:

No data available.

Bioaccumulative potential:

No data available.

Mobility in soil:

No data available.

Other adverse effects:

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Avoid release to the environment.

Ecological Data for N-methyl-2-pyrrolidone:

Component:

872-50-4:

Toxicity to fish:

LC50 (96 h) > 500 mg/l, *Salmo gairdneri*, syn. *O. mykiss* (static)

The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates:

EC50 (24 h) > 1,000 mg/l, *Daphnia magna* (DIN 38412 Part 11, static)

The details of the toxic effect relate to the nominal concentration.

Aquatic plants:

EC50 (72 h) > 500 mg/l, *Scenedesmus subspicatus* (DIN 38412 Part 9)

The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish:

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 12.5 mg/l, *Daphnia magna* (OECD Guideline 202, part 2, semistatic).

The details of the toxic effect relate to the nominal concentration.

Assessment of terrestrial toxicity:

Study scientifically not justified.

Microorganisms/Effect on activated sludge:

Component:

872-50-4:

Toxicity to microorganisms:

DIN EN ISO 8192 aquatic

activated sludge, industrial/EC50 (0.5 h): > 600 mg/l

The details of the toxic effect relate to the nominal concentration.

Persistence and degradability:

Component:

872-50-4:

Assessment biodegradation and elimination (H20):

Readily biodegradable (according to OECD criteria).

Elimination information:

73 % BOD of the ThOD (28 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (aerobic, inoculum conforming to MITI requirements (OECD 301C)). Readily biodegradable (according to OECD criteria).

Assessment of stability in water:

In contact with water the substance will hydrolyse slowly.

Bioaccumulative potential:

Component:

872-50-4:

Assessment bioaccumulation potential:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil:

Component:

872-50-4:

Assessment transport between environmental compartments:

The substance will rapidly evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is not expected.

Ecological Data for triethylamine

Toxicity:

Toxicity to fish:

LC50 (96 h) 36 mg/l, Oncorhynchus mykiss (Flow through)

Aquatic invertebrates:

LC50 (48 h) 17 mg/l, Ceriodaphnia dubia (semistatic)

The statement of the toxic effect relates to the analytically determined concentration.

Aquatic plants:

Toxic limit concentration (4 d) 1 mg/l, *Scenedesmus quadricauda* (Growth Inhibition Test, static)
Literature data.

Chronic toxicity to fish:

No observed effect concentration (60 d) 3.2 mg/l, *Oncorhynchus mykiss* (semistatic)

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (7 d) 7.1 mg/l, *Ceriodaphnia dubia* (semistatic)

Assessment of terrestrial toxicity:

Study scientifically not justified.

Microorganisms/Effect on activated sludge:**Toxicity to microorganisms:**

DIN 38412 Part 8 aerobic

Bacterium/EC50 (17 h): 95 mg/l

The product is highly volatile. Tested in a closed test system. The details of the toxic effect relate to the nominal concentration. After neutralization, it is no longer toxic.

Persistence and degradability:**Assessment biodegradation and elimination (H20)**

Readily biodegradable (according to OECD criteria)

Elimination information:

80.3 % CO₂ formation relative to the theoretical value (29 d) (OECD 301B; ISO 9439;

92/69/EEC, C, 4-C) (aerobic, activated sludge, domestic)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Assessment of stability in water:

According to structural properties, hydrolysis is not expected/probable.

Bioaccumulative potential:**Assessment bioaccumulation potential:**

Significant accumulation in organisms is not expected.

Bioaccumulation potential:

Bioconcentration factor: 0.5 (42 d), *Cyprinus carpio* OECD Guideline 305C).

Additional information:

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

SECTION XIII – DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Dispose of in accordance with Federal, State and Local regulations.

SECTION XIV – TRANSPORTATION INFORMATION

Land transport (DOT):

Non-regulated

Sea transport (IMDG):

Non-regulated

Air transport (ICAO/IATA):

Non-regulated

SECTION XV – REGULATORY INFORMATION

SARA Title III Section 313:

This product contains the following substance(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (40 CFR 372).

N-methyl-2-pyrrolidone	3.7 %
Triethylamine	1.2 %

SARA Title III 312 Hazard Category (40 CFR 311/312):

Acute Health:	Yes	Release of Pressure:	No
Chronic Health:	No	Reactive:	No
Fire:	No		

US Federal Regulations (TSCA):

This product is not listed on the EPA/TSCA Inventory of Chemical Substances. It is for research and development use only, by or directly under the supervision of a technically qualified individual.

SECTION XVI – OTHER INFORMATION

HMIS Rating:

Health: 2
Flammability: 1
Reactivity: 0
PPE: B

Date of Printing: 2-15-19

Contact person: EHS Department

Telephone: (781) 592-6444

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